



A.D. 1787 N^o 1590.

S P E C I F I C A T I O N

OF

JOHN REINECKE.

BOILERS.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,
NEAR FLEET STREET.

Price 9d.

1854.



A.D. 1787 N° 1590.

Boilers.

REINECKE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN REINECKE, late of Little Bell Alley, Coleman Street, in the City of London, now of Chapel Street, Grosvenor Square, Gentleman, send greeting.

WHEREAS His most Excellent Majesty King George the Third did, by
5 His Letters Patent, under the Great Seal of Great Britain, bearing date
the Third day of February, in the twenty-seventh year of His reign, give and
grant unto me, the said John Reinecke, His especial licence that I, the said
John Reinecke, during the term of years therein expressed, should and law-
fully might use, exercise, and vend, within England, Wales, and Town of Ber-
10 wick upon Tweed, my Invention of "A MACHINE UPON AN ENTIRE NEW CONSTRUC-
TION, WHICH I CALL THE BRITISH BOILER, TO BE USED IN ALL HOUSEHOLD PURPOSES
WHERE BOILING IS REQUIRED, AND IS PARTICULARLY APPLICABLE AND BENEFICIAL TO
ALL TRADES AND MANUFACTURES WHERE BOILING, WASHING, DISTILLING, OR EVAPORA-
TING, AND IN ALL MILLS AND WORKS WHERE THE POWER OF STEAM IS MADE USE OF,
15 AND UPON ALL OCCASIONS WHERE ANY LIQUID, SAND, OR SUBSTANCE IS REQUIRED TO BE
HEATED, AS IT WILL BE A MOST MATERIAL AND CONSIDERABLE SAVING IN THE ARTICLE
OF FUEL OF ALL KINDS, AND WILL PERFORM ITS SEVERAL OPERATIONS IN A MORE EXPE-
DITIOUS MANNER THAN BY THE MODES HITHERTO PRACTISED;" in which said Letters
Patent there is contained a proviso obliging me, the said John Reinecke, under
20 my hand and seal, to cause a particular description of the nature of my said In-
vention, and how the same is to be performed, to be inrolled in His Majesties
High Court of Chancery within one calendar month after the said recited

Reinecke's Improved Machine to be used in Household Purposes.

Letters Patent, as in and by the same, relation being thereunto had, may more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said John Reinecke, do hereby declare that my said Invention is described in the annexed plan and description thereof. 5

In witness whereof, I, the said John Reinecke, have hereunto set my hand and seal, this Second day of March, One thousand seven hundred and eighty-seven.

JOHN REINECKE. (L.S.)

WALKER. AND BE IT REMEMBERED, that on the Second day of March, in the 10 year of our Lord 1787, the aforesaid John Reinecke came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and everything therein contained and specified, in form above written. And also the Specification aforesaid was stampd according to the tenor of the Statutes made for that purpose.

Inrolled the Third day of March, in the year of our Lord One thousand seven hundred and eighty-seven.

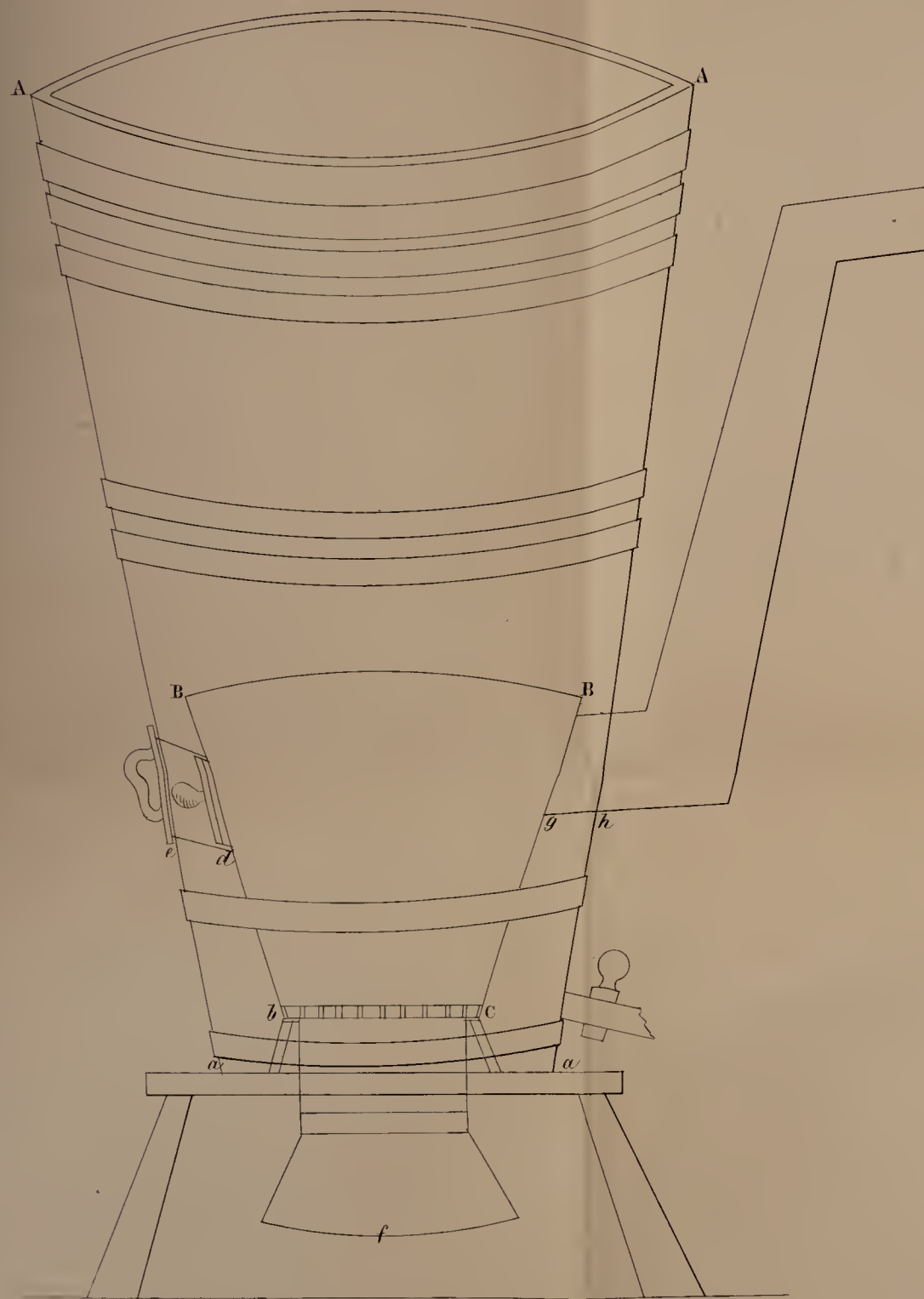
LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.

SPECIFICATION OF REINECKE'S INVENTION.

Principle of this Invention.

Heat has its conductors, as the Electric matter has its own. The best conductors of heat are metals, and stones and air are good conductors of it. If therefore a certain quantity of heat, designed to operate upon any fluid, is given in such a manner, that it operates more upon the metal, stone, than upon the fluid, and conducted rather from the fluid than towards it, it is natural that the greatest part of it will be lost for the purpose intended. But such is merely the case in all operations and professions employed in boiling, evaporating or distilling as far as they are hitherto commonly managed. Consequently the intended aim of those operations will be obtained with a considerable quantity of fuel by grounding them upon a principle opposite in this respect, and of the manner in which I make the application of that principle, arise at the same time. Such advantages for the economy of Vessels, Brickwork Chimneys &c. that I flat-ter myself they are an object worthy their attention. The general method of giving the heat in all operations of boiling evaporating or distilling, as commonly in use at present, is as follows. A vessel of any metal is fixed in brick work or stone, the fire being put underneath the copper in such a manner that the heat thereof operates on its bottom and part-ly on its sides, but it exercises this action but for an instant, and then it goes out at the Chimney by the hole of the Brick work which contains the Copper. The Copper being of metal, which is the best conductor of the heat communicates it very quick and consequently in a great degree to the surrounding air, and tho' by this leading power the heat is communicated to the fluid contained in the Copper, yet by the very same power it must also be carried out of it again in respect of so much time, the fluid still remains in the Copper and of the more lea- ding nature of the metal. It is much the same case with the Brick or stone frame which encompasses the Copper. The great mass of stones attracts the heat eagerly requires a great deal of it to be saturated with, and being so it communicates to the air. Every one who has opportunity to observe how much heat and time is required to make boil a vessel full of water and con- tained in a great frame of Brickwork; and also how long this Brickwork still remains hot even after the fire is gone, and finally how great a degree of warmth reigns round the said Brickwork will be completely convinced thereof. The greatest part of the heat loses itself through the Chimney which is made so clear by ocular witness that it needs no further proof. Instead of a Boiler of metal which occasions a great loss of heat by its being the best conductor of it. I make use of a vessel of wood, which in comparison with metal is no conductor at all, and how great this difference is, and consequently how much heat must be gained by it, we will be convinced of by an experiment very simple in its nature viz. By help of the machine I am going to give an account of water may be boiled in an Iron Hooped vessel made of wood, clasp your hand on the wood, and you will find it but temperately warm, when on the con- trary you will hardly be able to bear the heat, clapping your hands to the Iron hoops, tho' they are at a greater distance from the warming power. Instead of the Oven commonly consist- ing of a mass of brick work which appropriates to itself so great a part of the heat, and deprives the fluid of it, and then communicates it to the air. I make use of a stove which being put fire into, in that very moment it receives the heat communicates it not to the atmosphere, but to the body only intended to be acted upon by it (viz.) to the fluid itself in which the stove stands, and by which it is surrounded. Finally instead of losing the greatest part of the heat by the Chimney as it is the case in the common way. I use the very same chimney like a stove, and by these means the artists are enabled to reap more and greater advantages of this part of the heat than by any other hitherto invented. As much of the principle it- self, the chief point now will be how to appropriate and employ it. Have a Vessel or Tub made of Wood which by way of a Bathing stove is rendered fit for the purpose, this vessel or tub is principally distinguished from the common ones in that particular that it is narrower at the bottom than at the top, forming an upside down cone, and more or less so as the operation does require. See Figure A A a. For this Tub must be made a stove (B B) of any kind of metal, answerable however to the nature of the fluid; it may be made either of a substance subject of melting, or of such that it is not liable to it, as it stands entirely in the fluid. The figure of the stove, its diameter, its height, and its dimensions answerable to the Tub may be minutely determined, yet each different case requiring different alterations, it is almost impossible to state a general rule. The joining figure is of the following dimensions (viz.) the tub is 3 feet high, the utmost diameter A A, is 2 feet, and the smallest a a, one foot. The stove is one foot high; the lar- gest diameter B B 14 inches, and the smallest seven inches. The stove has got three openings which are led through the Tub by way of pipes and there must be made waterproof the any able workman that understands soldering will know without further explaining how this combination is to be done. Yet I don't think it unnecessary to remark that in this case the common way of making waterproof is not to be depended upon, namely a piece of greased canvas or leather being tacked round the place: a better method would be to make a notch round the hole the pipe is to be led through, to be lined with such metal which easily may be soldered & soldering upon that lining the pipe which for such purpose ought to have a pre- portable border. The first opening in the stove is that by which the fire is lighted, and be supplied with fuel, this hole may be made any where and in any shape or size, in the joining figure, it is in C on the uppermost part of the stove, in order that it may almost be filled up with fuel, and for that purpose this opening should rather be inclining downward. To this opening in the stove a pipe is soldered which goes thro' the Tub and there is to be combined in such a manner as to be water proof. According to what I have said above respecting the prin- ciples of the leading power, this pipe should not project on the outside of the tub, but there ^{may} be made of wood also for that very reason the tub should not have iron hoops or they ought to be covered with any thing less subject to the leading power. The figure shows a pipe of 4 inches square; for great operations it ought to have two shutters, the one (d) shutting the opening (c), in the stove a wooden handle may be fixed to it for the better managing it and without burning one's hands, the other (e) on the outside of the Tub is to be of wood according to the stated principle. The second opening in the stove is where the ashes fall through and at the same time to give draught to the air, for this end an iron grate as large as the open- ing in that part of the stove is to be fixed at (b, C) the smaller diameter of the stove, to the opening also a pipe of 6 inches diameter must be soldered in such a manner that the grate is at about 2 inches distance from the bottom of the Tub, that the pipe goes through the Tub's bottom and projects a few inches from a better draught a mouth (f) of a larger diam- eter may be fixed to that projecting part. I shall not enter at large how to fasten the stove in the Tub it being a point which may be obtained very easily in many different manners, in the joining figure it stands on a kind of Trivet of Iron. The third opening is that through which the smoke is carried out (should some particular purpose not require an exception) this must also be of an inferior diameter, than the receptacle for the ashes, as the air ought to go thro' a pipe being wide at the beginning and growing narrower and narrower. If the circum- stances do permit this opening should be higher than that which serves for firing, this opening is in, g and is of four inches diameter, this pipe being of the same dimension goes in, h) through the Tub and then is to be combined with the same as also to be made water proof, like the two others. There remains to shew, how, according to my principles, the heat pro- duced by this smoke pipe may also be made use of and be brought to advantage. The variety of the run and circumstances may occasion various changes in this respect. I must therefore likewise restrain myself to make some general remarks on that head. Again this generality consists that this pipe is to be made of but thin metal, and of such as will agree with the fluids, it may then be conducted through a vessel containing any fluid that is to be evaporated or distilled. This operation chiefly depending from the superficies of the fluid, it is necessary that the vessel ^{may} be constructed of a more flat or shallow, than a deep form in order that this lesser degree of heat may be able of procuring the in- tended effect. Not chusing however to have vessels made different to the common form, and yet there may be a large quantity of fluid the aim may still be obtained by various ex- pedients. For example, by means of a small stove being put in such a vessel. Or the smoke pipe being made in a serpentine form, or several of such smoke pipes being brought into one ves- sel (as there will be required more than one of these machines in business of great extent, and many more of such Expedients the artist will easily find out by practice. Moreover I will be more explicit upon this subject in a treatise I mean to publish and which I promise to join for the better convenience of the Public. In the same Treatise I mean to mention all the arts trades and operations where my invented machine may be made use of, together with the alterations which will be required in different cases.



Scale of two feet



